

What is claimed is:

1. A circuit for amplifying an input signal, comprising:

5 a power amplifier that receives the input signal and produces an output signal;  
an amplitude detector coupled to an output of the power amplifier that produces  
a first measurement that corresponds to the amplitude of the output signal;  
a power source for providing power to the power amplifier;  
a current detector that produces a second measurement that corresponds to the  
10 current flowing into the power amplifier from the power source;  
an adder for adding the first measurement with the second measurement to  
produce a third measurement; and  
a control circuit connected to a biasing pin of the power amplifier for comparing  
the third measurement to a reference and for controlling the output power of the power  
15 amplifier based on the comparison.

2. The circuit of claim 1, wherein the amplitude detector comprises an  
envelope detector.

20 3. The circuit of claim 2, wherein the envelope detector comprises a diode  
and a resistor connected in parallel with a capacitor, wherein the diode is connected in  
series with the resistor and the capacitor.

4. The circuit of claim 3, wherein the amplitude detector further comprises a voltage to current generator that receives an output voltage from the envelope detector and converts the output voltage to a current.

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5. The circuit of claim 4, wherein the voltage to current generator comprises a transistor.

6. The circuit of claim 1, wherein the current detector comprises a first resistor and the adder comprises a second resistor, wherein the resistance of the second resistor is larger than the resistance of the first resistor.

7. A mobile communication device comprising a circuit according to claim 1.

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8. A circuit for amplifying an input signal, comprising:

a power amplifier that receives the input signal and produces an output signal;

an amplitude detector means, coupled to an output of the power amplifier, for producing a first measurement that corresponds to the amplitude of the output signal;

5 a means for providing power to the power amplifier;

a current detector means for producing a second measurement that corresponds to a current flowing into the power amplifier from the power providing means;

an adding means for adding the first measurement with the second measurement to produce a third measurement; and

10 a control circuit means, connected to a biasing pin of the power amplifier, for comparing the third measurement to a reference and for controlling the output power of the power amplifier based on the comparison.

9. The circuit of claim 8 wherein the amplitude detector means comprises

15 an envelope detector.

10. The circuit of claim 9, wherein the envelope detector comprises a diode and a resistor connected in parallel with a capacitor, wherein the diode is connected in series with the resistor and the capacitor.

11. The circuit of claim 10, wherein the amplitude detector means further comprises a voltage to current generator means for receiving an output voltage from the envelope detector and converting the output voltage to a current.

5 12. The circuit of claim 11, wherein the voltage to current generator means comprises a transistor.

13. The circuit of claim 8, wherein the current detector means comprises a first resistor and the adding means comprises a second resistor, wherein the resistance of the second resistor is larger than the resistance of the first resistor.

14. A mobile communication device comprising a circuit according to claim 8.

15. A method, comprising the steps of:

producing a first measurement corresponding to the amount of current flowing  
into a power amplifier from a power source;

producing a second measurement corresponding to the amplitude of an output  
signal produced by the power amplifier;

adding the first measurement to the second measurement to produce a sum;

comparing the sum to a reference;

controlling the power amplifier based on a result of the comparison.

16. The method of claim 15, wherein the step of controlling the power  
amplifier comprises the step of applying a voltage to a biasing pin of the power  
amplifier.

17. The method of claim 16, wherein the magnitude of the voltage is a  
function of the difference between the sum and the reference.